

REMARKS/ARGUMENTS

Claims 3, 4, 6, 7, 9, 12, 13 and 15 through 20 and 23 through 26 remain in this application. Claims 1, 2, 5, 8, 10, 11, 14, 21 and 22 have been canceled. Claims 12, 13, 15 through 19, 24 and 26 have been acted upon so it is presumed that the previous requirement for restriction has been reconsidered and withdrawn. Claims 23 and 24 have been amended. It is believed that none of the amendments to claims 23 and/or 24 introduce new matter.

In the outstanding Office Action mailed on March 30, 2011, the examiner has rejected claims 3, 4, 6, 7, 9, 12, 13 and 15 through 20 and 23 through 26 solely on the bases of 35 U.S.C. § 101 and 35 U.S.C. § 112, first paragraph. All rejections based on the prior art have been withdrawn. Applicants hereby traverse the stated rejections and submit that claims 3, 4, 6, 7, 9, 12, 13 and 15 through 20 and 23 through 26, as amended hereinabove, comply fully with the requirements of 35 U.S.C. § 101 and 35 U.S.C. § 112, first paragraph.

From paragraph 5 of the action, it is understood that the examiner is saying that the invention is not capable of distinguishing an abnormal milk flow due to one injured teat or infected udder quarter from an abnormal milk flow due to two or three injured teats or infected udder quarters. However it is not necessary to make such a distinction. An animal will be selected for medical inspection regardless of whether it has one, two, three or four injured teats or infected udder quarters. The point about the invention is that an abnormal milk flow due to just one injured teat or infected udder quarter can be detected even though only one milk meter is used. This in turn provides for early detection of mastitis even when only one teat is infected and before the condition spreads to the other teats and becomes more serious. Moreover, in the event that more than one teat (say two teats, three teats or even four teats) is infected or injured,

early detection of such condition is still detected. This was explained in the argument filed in July 2010, in response to the official action issued on March 10, 2010.

Regarding both outstanding rejections (35 U.S.C. § 101 and 35 U.S.C. § 112, first paragraph), to applicants, the problem here is essentially one of semantics. When the original wording of claim 23 said "one teat" the examiner read this to mean "one or more teats", and then found the prior art relevant to the "more teats" option. The claims have been amended above to more clearly point out the distinction and utility of the invention which provides a signal from the total flow regardless of whether the flow from only one, any two, any three or any four teats is abnormal. This is determined by detecting an abnormality in the total flow. The point is not necessarily to identify an injured or infected teat, but to identify an animal which is suspected of having an injury or infection regardless of the number of teats that may actually be involved.

Applicants believe that a lack of clarity cannot now be alleged since during the milking of a single animal there can never be an abnormal milk flow from only one teat and also an abnormal milk flow from more than one teat. There has to be an abnormal milk flow regardless of the number of teats which are injured or infected. Furthermore, the prior art does not teach generating a signal when there is an abnormal milk flow from only one teat. Here the invention provides a procedure and an apparatus for detecting an abnormal milk flow regardless of whether only one, any two, any three or any four teats or udder quarters injured or infected.

The foregoing distinctions are explained and fully supported in the specification as originally filed. As stated at page 3, of WO 2005/067701 A1,

In the case of many cows there are usually four step reductions in the milk flow curve, and counting the number of steps can provide a simple technique for detecting an abnormality, such as due to an injured teat or an udder quarter being infected by mastitis.

Thus, in accordance with the present invention, a detectable signal is presented in the total flow which detectable signal may be the result of a one step, two step, three step or four step reduction in the total milk flow curve. That is to say, a detectable signal signaling an infected or injured animal is present in the total milk flow regardless of whether the actual respective individual flow from only one, any two, any three or any four teats is abnormal.

In addition to the foregoing, it is stated at page 4 of WO 2005/067701 A1, that “[a] reduced peak flow rate without a corresponding reduction in the peak flow duration can be indicative of an injured teat or an udder quarter suffering from mastitis.” Furthermore it is stated, in the paragraph bridging pages 7 and 8 of WO 2005/067701 A1, that

there are four distinct steps on the flow curve towards the end of the milking procedure and an analysing device can be arranged to detect and count the number of steps included in the milk flow curve. Less than four steps can be indicative that the milk flow from one teat is not as predicted and hence there is a likelihood of a teat being injured or one udder quarter being infected such as by mastitis. The steps in the milk flow curve can be conveniently and efficiently sensed by calculating the slope of the curve, that is the rate of change of the milk flow rate. At each horizontal or level step portion the slope is close to zero, and as the curve drops from one step to the next the slope changes to sharply negative before becoming close to zero once more. The slope changes can be sensed by appropriate analysis of the data received to provide an efficient and effective way of counting the number of steps in the flow curve.

From the foregoing it is manifest that the original disclosure of the present application fully supports the language “said single output being generated whenever the flow from only one, any two, any three or any four teats is abnormal” now present in independent claims 23 and 24.

With specific regard to the rejection under 35 U.S.C. § 101, it is submitted that claims 23 and 24 clearly define an invention which has a specific and substantial asserted and well established utility. Thus, at page 8 of WO 2005/067701 A1, it is stated that

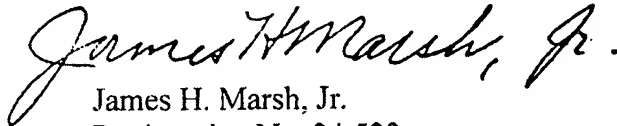
It will be understood that variations in milk flow curves will occur for individual animals and not all will have four clear distinct steps to their normal milk flow curve. However, through a statistical approach the number of clear drops can be reliably estimated. Provided that the number of stepwise reductions has been correctly measured, with acceptable certainty, and the statistical model shows with significance that the number of steps is less than predicted, an alert is set by the data analysing device to signal to the herdsman that the cow should be inspected because a teat injury, infection by mastitis or other ill health of the cow is suspected. This information, which is valuable for herd management purposes, is obtained through use of a single milk meter, meaning that the benefits are available in many existing milking plants without having to modify the milking equipment.

Regarding the rejection under 35 U.S.C. § 112, first paragraph, and with specific reference to the amendments and arguments set forth above, one of ordinary skill in the art should have no difficulty in understanding how to use the invention to achieve the stated objectives. That is to say, one of ordinary skill in the art should have no difficulty in determining how to improve the economies of milk production by employing the present invention so as to be able to use only a single milk meter to monitor and measure total milk flow from an animal during milking and thereby determine whether an animal being milked suffers from an injury and/or an infection. Manifestly, this determination is possible, in accordance with the invention, regardless of whether the respective flow(s) from only one, any two, any three or any four teats, making up the total flow, is the source of the abnormality.

Dependent claims 3, 4, 6, 7, 9, 12, 13 and 15 through 20, 25 and 26 are patentable for all of the reasons set forth above in connection with claims 23 and 24.

In view of the foregoing amendments and remarks it is clear that the claims remaining in this application comply fully with the requirements of 35 U.S.C. § 101 and 35 U.S.C. § 112, first paragraph and are therefore allowable. Moreover, it is clear that the application is now in condition for allowance. Accordingly, favorable action at an early date will be appreciated. If the examiner has any questions or comments, it is respectfully suggested that the applicants' undersigned attorney be contacted at the telephone number set forth below.

Respectfully submitted,

A handwritten signature in cursive script that reads "James H. Marsh, Jr.".

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